A Pragmatic Plan for Re-Writing Telecommunications Policy in Michigan to Promote Efficient Markets, Reasonable Prices, Network Reliability, and the Public Interest

Prepared for AARP

November 2013

Table of Contents

List of Tables

List of Figures

Executive Summary

The Michigan Telecommunications Act, which includes critically important elements for consumers, was substantially revised in June 2011. Beginning in January 2017, the current Section 313 permits basic local exchange and long distance service providers to discontinue service to customers in any exchange after providing notice, as long as there are two other "comparable" service providers. However, the proposed SB636 deletes that language. Specifically, the following provision would be deleted:

> A telecommunication provider that provides either basic local exchange or toll service, or both, shall not discontinue either service to an exchange unless 1 or more alternative providers for toll service, or 2 or more alternative providers for basic local exchange service, are furnishing a comparable voice service to the customers in the exchange. A comparable voice service includes any 2-way voice service offered through any form of technology that is capable of placing and receiving calls from a provider of basic local exchange service, including voice over internet protocol services and wireless services.[1]

The proposed legislation also would reduce the amount of notice consumers would receive and would reduce public input and Commission review.[2]

Michigan has yet to fully see the consequences of the 2011 amendments to the Michigan Telecommunications Act. If there is any need to revamp the current Section 313, the Legislature should seek instead to modify the existing legislation to ensure that consumers have actual competitive choices for reliable and affordable telephone service before allowing incumbent local exchange carriers to abandon communities and consumers. Rather than bringing the law in line with this objective, the proposed bill takes a dangerous step in the other direction.

Although the industry is undergoing substantial and sweeping changes, the level of competition that now exists in relevant Michigan markets is insufficient to ensure reasonable prices and reliable service for basic local exchange service. Furthermore, contrary to industry rhetoric, there is no evidence that regulatory oversight – which is essential in order to address market imperfections and distortions – inhibits network investment and modernization. In those geographic and product markets where a business case analysis shows that the net present value of the anticipated stream of new revenues (or savings in operating expenses) associated with a particular investment is greater than the net present value of the costs of such investment, a rational carrier will make the deployment.

---

[1] 1991 PA 179, Sec. 313 (1).

[2] 1991 PA 179, Sec. 313 (3) would be deleted under the proposed legislation.

If, for example, AT&T does not consider it profitable to deploy its U-Verse service[3] in certain areas of Michigan, it is implausible that the elimination of the existing service discontinuance requirements will suddenly render U-Verse deployment profitable in those areas of the state. Instead, state policy makers should be concerned that *absent regulatory oversight*, AT&T will neglect its infrastructure in those geographic and product markets that AT&T considers unprofitable. Similarly, regulatory oversight of basic local exchange service would not prevent AT&T from deploying U-Verse (and other new technologies) in those parts of the state where it anticipates generating a positive cash flow.

AT&T and other carriers may seek to engage in scare tactics and attempt to persuade state policy makers that every dollar it spends to maintain the state's copper network is a dollar that it does not have to invest in "new" technologies. This ploy should be viewed skeptically. "New" technology typically is a reference to wireless services and to Voice over Internet Protocol ("VoIP") or IP-based technology. Nationally, AT&T earns seemingly ample profit from its wireless operations with an EBITDA margin of approximately 42% in the third quarter of 2013.[4] AT&T earns 32.3% of the nation's wireless revenues.[5] Regulatory oversight certainly does not seem to be hampering AT&T's ability to deploy and to market wireless service, while earning substantial profits for its investors. Instead, state regulators' concern should be that absent regulatory oversight, AT&T will allow its copper network to deteriorate prematurely so that AT&T can more easily persuade its customers to migrate to AT&T's more lucrative product lines. As to the much-heralded transition to IP – the primary providers of VoIP are the cable companies, which provide VoIP service to approximately 1.2 million residential and business lines in Michigan.[6] Incumbent local exchange carriers (ILEC) offer VoIP service to approximately 193,000 residential and business lines in Michigan.[7]

The notion that the regulation of AT&T's basic local exchange service (or the simple requirement that AT&T continue to provide traditional phone service) somehow prevents cable companies from offering VoIP is, on its face, illogical. Regarding AT&T's VoIP deployment – AT&T's decisions about when and where to deploy its U-Verse likely are based on rigorous

---

[3] AT&T's U-Verse includes fiber to the node and then relies on copper plant for the last "leg" to the customer premises (by comparison, Verizon's FiOS includes fiber to the home).

[4] AT&T Investor Briefing No. 282, Third Quarter 2013, October 23, 2013, at 2. EBITDA (Earnings before Interest, Taxes, Debt, and Amortization) equals accounting profits before deducting interest expenses, corporate income taxes, depreciation, and amortization and an EBITDA margin is EBITDA as a percentage of total revenue.

[5] *In the Matter of Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993; Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, Including Commercial Mobile Services*, WT Docket No. 11-186 (Terminated), *Sixteenth Report*, rel. March 21, 2013 ("FCC Wireless Report"), Table 12, at page 55.

[6] Federal Communications Commission, *Local Telephone Competition: Status as of June 30, 2012*, rel. June 2013 ("FCC Local Competition Report"), at Table 9.

[7] *Id.*

business case analyses that are specific to AT&T's estimates of the cost and benefit of particular deployment strategies. In other words, there is no evidence that if AT&T "saves" a dollar by neglecting its copper network, it will then "spend" that same dollar on U-Verse deployment. AT&T is seeking the Legislature's blessing on a vision where AT&T could unilaterally determine when and where to turn its back on some of the state's most vulnerable customers – such as the elderly, those who value the reliability of the copper network to reach emergency services, and those with low and fixed incomes.

State policy makers may hear claims of "robust" competition and assertions that consumers "can vote with their feet." These claims, too, should be examined carefully. Cable companies have emerged as the major competitor to incumbent local exchange carriers in the provision of landline voice service (cable companies' VoIP services now represent almost 45% of residential landlines in Michigan). Together incumbent local exchange carriers and cable companies represent a duopoly, which is not effective competition – together, they serve approximately 97% percent of the residential landlines in Michigan. Although incumbent carriers often point to the large quantity of wireless subscriptions, the majority of households subscribe to wireless service *in addition to* and not instead of landline voice service. Furthermore, AT&T has a compelling economic incentive to encourage its customers to migrate from its landline service to its typically more expensive (and less reliable) wireless service or to its fixed wireless service. Just as Verizon is promoting Voice Link (its new fixed wireless service, which, as it is presently offered, jeopardizes public safety, raises consumers' costs, and harms small businesses) as a purported substitute for its basic local telephone service, AT&T may seek to do the same with its "Mobile Premises Services"[8] also known as "Wireless Home Phone" service.[9]

Changes in technology (*i.e.*, migration to fiber, IP, and wireless) should not result in an erosion of consumer protection and public safety. Among other things, extreme weather conditions and network outages underscore the importance of network reliability to the safety of Michigan's consumers.

As Michigan continues the modernization of its telecommunications network, regulatory oversight continues to be important for various reasons, including, among others, to address the market imperfections and distortions that persist, to ensure that all consumers (urban and rural, elderly and young, with various medical conditions, and of various incomes) have access to

---

[8]FCC Public Notice, "Technology Transitions Policy Task Force Seeks Comment on Potential Trials," GN Docket No. 13-5, DA 13-1016, rel. May 10, 2013, at fn 31: "See AT&T Wire Center Trials Petition at 9 (explaining that AT&T will offer wireless communications alternatives to customers living in particularly high-cost areas, including its Mobile Premises Services, which allows customers to make calls using ordinary wireline handsets connected to wireless base stations)."

[9] AT&T's web site cautions: "AT&T Wireless Home Phone is not compatible with home security systems, fax machines, medical alert and monitoring services, credit card machines, IP/PBX Phone systems, or dial-up Internet service. " http://www.att.com/shop/wireless/devices/att/wireless-home-phone-silver.html?WT.srch=1&wtPaidSearchTerm=wireless+home+phone site visited October 31, 2013.

reliable, affordable, high quality service; to continue the role of state regulators in mediating consumer-industry disputes; and to guide the state's migration to new technologies in such a way that consumers' public safety and universal access to service are retained.

Introduction

This report was authored by Susan M. Baldwin and Sarah M. Bosley, independent consultants,[10] for AARP with the guidance of AARP staff members Coralette Hannon, Senior Legislative Representative, Government Affairs; Lisa Dedden Cooper, Manager Advocacy, AARP Michigan; and Melissa Seifert, Associate State Director - Advocacy, AARP Michigan. The views expressed herein are for information, debate, and discussion and do not necessarily represent official policies of AARP. The purpose of the report is to assist legislators in re-writing state telecommunications policy to promote the development of markets and modern networks in Michigan that are in the public interest.

[10] Ms. Baldwin and Ms. Bosley have combined 43 years of experience in the field of telecommunications economics, policy, and regulation. They consult to consumer advocates throughout the country on state and federal matters.

Section 1 Telecommunications Policy Goals

Introduction

As industry players transition their telecommunications and broadband networks toward new technology, consumers can benefit from diverse and innovative services and, in some markets, by an expanded choice of suppliers. However, there is no need to sacrifice consumer protections simply because technology evolves. Furthermore, the evolution of networks does not necessarily result in effective competition and indeed could reduce competitive options. The level of competition that exists varies by product market and by geographic market. Unless and until effective competition exists, regulatory oversight is essential to address market imperfections, including those that harm consumers (such as unexpected charges on telephone bills, unreasonable termination fees, inadequate customer education, unreliable service, high prices, etc.).

Relying solely upon the Attorney General to enforce consumer protections is insufficient and is an inadequate substitute for the oversight that the Michigan Public Service Commission (PSC), with its administrative expertise acquired over decades, offers. Furthermore, absent adequate resources, a legislative mandate to rely on the Attorney General's office to ensure compliance would be meaningless, and consumers would be harmed. The following section of this paper sets forth recommended goals to guide the development of sound telecommunications policy for Michigan.

Telecommunications Policy Goals

Efficient markets

Efficient markets depend on adequate information. Well-informed consumers make more efficient economic transactions than do those who purchase "in the dark."

Minimizing transaction costs enhances competition and is consistent with efficient markets.

Reasonable, affordable prices

In markets where effective competition has not yet emerged, regulatory oversight is essential to ensure that rates, terms, and conditions of service are just, reasonable, and affordable.

Innovation and investment

All consumers should benefit from innovation. Absent affirmative public policy guidance, industry may deploy widely varying levels of deployment of services among communities, potentially relegating some communities and consumers to inferior options for basic telephone service and for broadband access to the Internet. Industry cannot be relied upon to take the steps necessary to close the gaps between those with access to advanced technology and those without such access.

Competition can contribute to innovation, but is not an end unto itself. In other words, if certain markets do not lend themselves to competitive entry (such as rural, sparsely populated regions of the state), there may be minimal or no competition. Allowing competition to flourish where it is economically efficient and identifying those markets where market forces are not yet strong enough to yield reasonable prices and reliable service are key elements of telecommunications policy that promotes the public interest.

Network reliability and public safety

Extreme weather conditions as well as the transition to new technologies have underscored that network reliability is essential to a state's welfare, safety, and economy. As this report discusses in more detail, in recent years, hurricanes and storms have exposed the vulnerability of telecommunications networks including copper networks that lacked, for example, sufficient back-up power as well as the vulnerability of newer technologies.

Public Interest

Industry often seeks to persuade legislators that regulatory reform means regulatory relief and that, purportedly, less regulation is essential to spur investment and innovation. Industry objectives appropriately lie with shareholders, not consumers. However, the role of the State Legislature and the Michigan Public Service Commission is to foster the public interest and ensure that public interest goals are met.

Telecommunications Policy Goals

- Efficient markets
- Reasonable, affordable prices
- Network reliability and public safety
- Innovation and investment
- Public interest

Essential elements of telecommunications policy in the public interest

Regardless of the technology that carriers use to serve customers, certain fundamental consumer protection measures are essential. The following provides the essential elements of telecommunications policy in the public interest; though existing state law may encompass some of these elements, they are in jeopardy of disappearing, depending on legislative activity:

- *Reliability of basic telephone service for all consumers during normal and extreme weather conditions; industry preparedness for power outages and extreme weather; industry response to power outages and extreme weather. IP networks should provide service no less reliable than voice service provided over copper wire landline networks.*
    - Network/service reliability requirements, regardless of technology platform. Reliability metrics, data collection, and reporting requirements should be established and monitored, and data should be public.
    - Emergency preparedness and public safety oversight, including 9-1-1 and transition to E9-1-1 and NG9-1-1, to ensure the industry is prepared for natural and manmade emergencies and is accountable to consumers for their responses to such emergencies, including the adequacy of backup power on a wireless or IP-based network.
- *Affordability and quality of basic telephone service. The IP network should provide comparable service at a comparable price point to the voice service provided over traditional landline networks.*
    - Rates, terms, and conditions for basic service (conditions should encompass such aspects of service as the timeliness of repair of service).
    - Economically sound criteria for reclassification of basic services as "competitive."

  - Criteria that disallow reclassification of basic service as "competitive" as a result of purchasing basic service in conjunction with one or more "discretionary" services.
  - Policies to ensure universal basic telephone service to all consumers, including "carrier of last resort" obligations.
- *Universal access to affordable and reliable broadband Internet access.*
- *Industry operations and changes should be subject to regulatory review.*
  - Proposals to withdraw (or transfer control of the operation of) traditional landline service.
  - Affiliate transactions (transactions between the company that offers basic local service and its affiliates).
- *New technology deployment as a substitute for traditional basic phone service.*
  - Ensure that customer migration to new technology is optional until such time as new technology has been proven to be as reliable, affordable, and easy to use as existing technology.
  - Interconnected Voice over Internet Protocol (VoIP) service regulation, including a determination of the state's ability to arbitrate IP interconnection agreements.
  - In light of the growing role of VoIP in the state's telecommunications infrastructure, the Michigan Legislature should re-consider its VoIP policy and specifically should authorize the Michigan Public Service Commission to oversee the terms and conditions of this service.
- *Consumer dispute oversight and resolution.*
  - Consumer complaints, including billing and termination disputes, slamming, and cramming violations, regardless of technology platform.
  - Sales and marketing practices, including audits, so as to detect and deter misleading practices, regardless of the technology platform.
- *Lifeline and state universal service assistance programs for voice service and broadband access. Supporting carrier subsidies where there is a demonstrated need and in line with federal intercarrier compensation regulations.*
- *Monitoring the level of competition in wireless markets: as the percentage of "cord-cutters" increases and depending on the level of competition in wireless markets, state regulators could petition the FCC, pursuant to the Omnibus Reconciliation Act, for authority to regulate wireless rates.*[11]

---

[11] See 47 U.S.C. 332(c)(3)(A), which states:

> Notwithstanding the first sentence of this subparagraph, a State may petition the Commission for authority to regulate the rates for any commercial mobile service and the Commission shall grant such petition if such State demonstrates that—
> (i) market conditions with respect to such services fail to protect subscribers adequately from unjust and unreasonable rates or rates that are unjustly or unreasonably discriminatory; or
> (ii) such market conditions exist and such service is a replacement for land line telephone exchange service for a substantial portion of the telephone land line exchange service

Section 2 Overview of Telecommunications Markets

Who serves Michigan?

The largest local exchange carrier in Michigan is AT&T Michigan. Historically, the company that operated these facilities was Michigan Bell, which was split off from legacy AT&T, at the time of divestiture. At that time, Michigan Bell's parent company was Ameritech, one of seven regional Bell operating companies ("RBOCs") created at divestiture in 1984.[12] Through a series of mergers and acquisitions, Ameritech was purchased by SBC (another RBOC), and then eventually SBC purchased "legacy" AT&T and began offering service under AT&T's name. The second largest ILEC in Michigan is Frontier (which includes the former Verizon North Inc. and Contel of the South, Inc.).[13] There are various smaller ILECs that serve Michigan as well. Also, various competitive local exchange carriers ("CLECs") offer services that are typically targeted to business customers (with the exception of cable CLECs offering VoIP service to residential customers).

Cable companies, which are also considered to be CLECs, have entered the local telecommunications market, by leveraging their cable television offerings to introduce broadband Internet access and voice services, often through a "triple play" bundle. Cable companies provide the most significant competition with ILECs for landline voice service offered to residential customers.[14] Cable companies do not compete with each other but rather serve their specific franchise areas.

> within such State. The Commission shall provide reasonable opportunity for public comment in response to such petition, and shall, within 9 months after the date of its submission, grant or deny such petition. If the Commission grants such petition, the Commission shall authorize the State to exercise under State law such authority over rates, for such periods of time, as the Commission deems necessary to ensure that such rates are just and reasonable and not unjustly or unreasonably discriminatory.

[12] As a result of various mergers and acquisitions, the original seven regional Bell operating companies are now AT&T, CenturyLink (which purchased Qwest), and Verizon.

[13] Michigan Public Service Commission, Michigan Department of Licensing and Regulatory Affairs, *The Status of Telecommunications Competition in Michigan*, submitted to the Governore and Legislature in Compliance with Public Act 179 of 1991 as Amended, June 2013 ("PSC Competition Report"). As noted in the cover letter to the report, the June 2013 report is the last annual report that will be submitted to the Governor and Legislature as a result of the amendements to the MTA approved in 2011.

[14] The MTA defines VoIP as an unregulated service, but does require registration for providers of VoIP services. *PSC Competition Report*, at 16. The PSC's survey collected information from licensed CLECs regarding VoIP lines, but many providers of VoIP lines are not compelled to participate.

Together, the cable companies and ILECs dominate residential markets, serving approximately ninety-seven percent of the residential landlines, creating a duopoly. Although there are several cable companies and several ILECs, they do not compete outside their own territories. AT&T Michigan, for example, does not compete in Frontier's territory for local customers. Comcast does not compete with Charter.

The major nationwide wireless carriers that serve Michigan include AT&T Wireless, Sprint,[15] T-Mobile, and Verizon. The FCC estimates that these four nationwide carriers served over 90 percent of the subscribers in the United States (with AT&T Wireless and Verizon Wireless serving 64 percent of subscribers).[16]

As Section 2 explains in detail below, although some customers (the so-called "cord-cutters") have migrated entirely away from landline service and rely solely on their wireless service, the majority of customers rely on *both* wireline and wireless service to fulfill their telecommunications needs. Furthermore, clearly AT&T Wireless does not create competitive pressure for AT&T Michigan, and indeed, AT&T Michigan possesses a strong economic incentive to encourage its customers to migrate to AT&T Wireless.[17]

---

[15] On November 16, 2012, SoftBank Corp. ("SoftBank"), its indirect United States subsidiary Starburst II, Inc. ("Starburst II"), and Sprint Nextel Corporation ("Sprint") submitted their applications to the FCC pursuant to sections 214 and 310(d) of the Communications Act of 1934, as amended and sections 34-49 of the Submarine Cable Landing Act, seeking the Commission's approval of the transfer of control of various licenses, leases, and authority now held by Sprint and its subsidiaries and by Clearwire Corporation ("Clearwire") to SoftBank and Starburst II. The proposed transaction is under review. Public Notice DA 12-1924, SoftBank and Sprint Seek FCC Consent to the Transfer of Control of Various Licenses, Leases, and Authorizations from Sprint to SoftBank, and to the Grant of a Declaratory Ruling Under Section 310(B)(4) of the Communications Act, IB Docket No. 12-343, November 30, 2012. The merger was completed in July, 2013. See, Sprint News Release, "Sprint and SoftBank Announce Completion of Merger," July 10, 2013.

[16] FCC Wireless Report, at para. 8.

[17] AT&T has introduced a "wireless home phone" which allows its customers to use their existing home telephone handsets and home telephone numbers with AT&T's wireless network instead of using a landline connection. "AT&T introduces no-contract wireless home phone," FierceTelecom, March 20, 2013. See, also, http://www.att.com/shop/wireless/devices/wirelesshomephone.html?source=ICwh0000050WHP00L#fbid=06JP5DBlzQI (access October 28, 2013). In November 2012, AT&T announced "Project Velocity IP." In its presentation to investors, AT&T indicated that the future of its voice service would be wireless. AT&T Analyst Conference 2012, "Laying a Foundation for Future Growth," November 7, 2012, available at: http://www.att.com/Common/about_us/files/pdf/analyst_presentation_c.pdf. See, also, Anton Troianovski, "AT&T Move Signals End of the Copper-Wire Era," *The Wall Street Journal*, November 7, 2012. *The Wall Street Journal* describes Project Velocity IP in the following manner: "The three-year plan will extend high-speed Internet to 8.5 million more homes and businesses but could eventually leave a quarter of the customers in AT&T's landline footprint, or 19 million homes and businesses, without any landline service from AT&T."

ILECs: incumbent local exchange carriers – AT&T, Frontier, and thirty-eight others

CLECs: licensed competitive local exchange carriers serving residential and business markets (approximately 100 responding to PSC's survey) with a focus on business customers

VoIP providers: including the cable companies (such as Comcast and Charter) with a focus on residential customers

Wireless Carriers: AT&T Wireless, Verizon, Sprint, T-Mobile, and smaller wireless carriers

What do today's markets look like?

There is, undeniably, a major shift in and expansion of the types of telecommunications services that consumers use. Conversely, there is a convergence of "traditional" telecommunications carriers and cable companies in markets. Consumers can subscribe to service bundles that include voice, "data" (*i.e.*, broadband Internet access), and video. In Michigan, AT&T's bundled offering is called U-Verse.[18] AT&T does not offer its U-Verse voice service as a stand-alone product but rather only bundled with other services.[19] AT&T's traditional basic residential exchange service is as low as $23 per month.[20]

Other companies, especially cable companies, also offer VoIP.[21] For example, Comcast offers XFINITY Voice Unlimited for an introductory price of $29.99 per month for the first six

[18] There is not a readily available place where one can view a map or list of specific localities where AT&T has deployed U-Verse. The information is considered proprietary. Consumers can call customer service representatives or enter a specific address on AT&T's website to determine availability in any particular location.

[19] Confirmed with customer service agent on October 28, 2013. See, also, http://www.att.com/shop/home-phone.html#fbid=OIvsSXYTMDD.

[20] AT&T Michigan Guide Book, Part 4 – Exchange Access Services, Section 2 – Exchange Lines and Usage, 10th Revised Sheet 3, Effective August 1, 2013. Rates include touch-tone service. There may be a "rural zone" charge of $1.69 per month. Consumers belonging to a Locality Rate Area may pay a "loading charge" for usage. See AT&T Michigan Guide Book, Part 4 – Exchange Access Services, Section 2 – Exchange Lines and Usage, 3rd Revised Sheet 6, Effective May 1, 2012. Calling areas vary. AT&T Michigan Guidebook available at: http://cpr.att.com/guidebook/mu/index.html#section1.

[21] The three largest cable providers in Michigan are Comcast, Charter and AT&T Michigan (U-Verse). Michigan Public Service Commission, Department of Licensing and Regulatory Affairs, *Status of Competition for Video Services in* Michigan, February 2, 2013, at 6-7. See http://www.dleg.state.mi.us/mpsc/comm/video/.

months.[22] After the promotion period ends, however, the rate reverts to its regular rates, which are currently between $39.95 and $44.95 per month.[23] Furthermore, Comcast's website notes that "Service (including 9-1-1/emergency services) may not function after an extended power outage."[24] A $29.95 activation fee is waived if a customer orders online, and the introductory rate offer only applies to new residential customers with no other XFINITY services. Comcast also offers XFINITY Voice Local with More service that includes unlimited local calling and 5 cents per minute long distance for $34.95 per month.[25]

Charter does not allow consumers to purchase stand-alone telephone service. Customers must bundle phone with either Internet, cable, or both services.[26]

The Michigan Public Service Commission does not require cable companies to report the number of VoIP lines they provide to consumers in Michigan because VoIP is classified as unregulated in Michigan.[27] For its *Competition* Report, the PSC relies upon FCC data regarding the quantity of VoIP subscriptions.[28] The FCC data is described and summarized below.

VoIP has emerged as the major alternative to ILECs' wireline service

Federal Communications Commission: Nationwide VoIP and Local Wireline Competition

As Figure 1 below shows, there has been enormous growth in consumer demand for VoIP service as an alternative to ILECs' "traditional" voice service. Since June 2009, the number of VoIP subscriptions in the United States grew 63% from almost 24 million to over 39 million in June 2012.[29] The VoIP share of total residential end-user switched access lines and VoIP subscriptions grew from 21.7% in June 2009 to almost 40.2% in June 2012.[30]

---

[22] http://wwwb.comcast.com/home-phone-service.html (site visited October 23, 2013).

[23] *Id.*, at "Details and Restrictions."

[24] *Id.* Customers can purchase a backup battery from Comcast that will provide up to 8 hours standby time or 5 hours of talk time. http://customer.comcast.com/help-and-support/phone/troubleshooting-battery-issues-with-digital-voice.

[25] http://wwwb.comcast.com/home-phone-service.html (site visited October 23, 2013).

[26] See, e.g., http://www.charter.com/browse/browse-bundles/bundles (site visited October 23, 2013).

[27] PSC Competition Report, at 16-17.

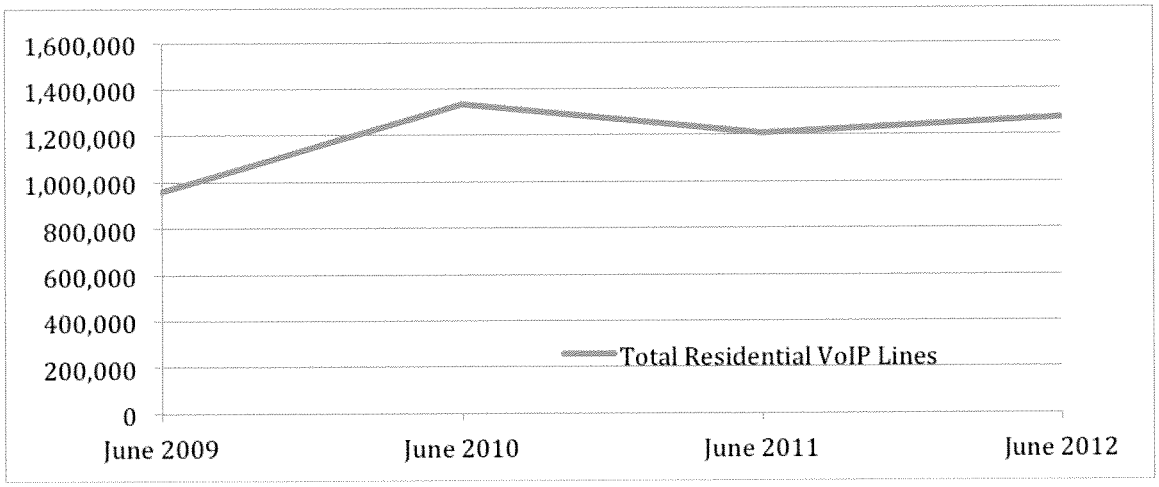
[28] *Id.*

[29] FCC Local Competition Report, at Table 3. As noted in the FCC's Local Competition Report, the FCC adopted a Report and Order in June 2008 that revised the "Form 477" reporting requirements (that yield the data provided in the FCC's Local Competition report). *In the Matter of Development of Nationwide Broadband Data to Evaluate Reasonable and Timely Deployment of Advanced Services to All Americans, Improvement of Wireless Broadband Subscribership Data, and Development of Data on Interconnected Voice over Internet Protocol (VoIP) Subscribership*, WC Docket No. 07-38, *Report And Order And Further Notice Of Proposed Rulemaking*, released: June 12, 2008 ("Form 477 Order"). Through the *Form 477 Order*, the Commission requires providers of interconnected VoIP service to furnish subscribership data (both end-user and resale), and to determine the

The interconnected VoIP service that cable companies offer households is the most popular wireline alternative to the local exchange services that incumbent local exchange carriers offer.

In Michigan, total residential interconnected VoIP subscriptions grew from 959,000 to 1.27 million (or 32%) from June 2009 to June 2012.[31] Correspondingly, the total interconnected VoIP share of total residential end-user switched access lines and interconnected VoIP subscriptions grew from 33% in 2009 to 51% in 2012.[32]

Figure 1: Growth in Residential Interconnected VoIP Usage in Michigan (2009 through 2012)



The interconnected VoIP service that cable companies offer is the most popular wireline alternative to the local exchange services that incumbent local exchange carriers offer.[33]

---

percentage of subscribers that are residential customers. The new reporting requirements took effect with the March 2009 filing of year-end data as of December 31, 2008. *Id.*, at fn 47.

[30] FCC Local Competition Report, at Chart 3.

[31] FCC, Wireline Competition Bureau, Industry Analysis and Technology Division, Local Telephone Competition: Status as of December 31, 2011, rel. January 2013; Status as of December 31, 2010, rel. October 2011; Status as of December 31, 2009, rel. January 2011; Status as of December 21, 2008, rel. June 2010, Tables 8, 9, and 10.

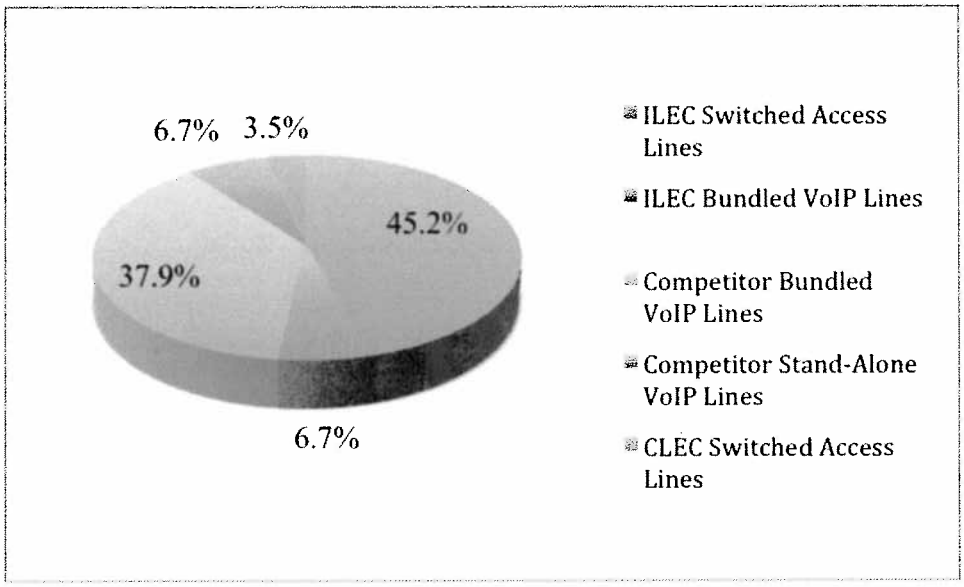
[32] *Id.* This includes the 6.7% of lines that are provided by the ILECs in the form of interconnected VoIP lines. Non-ILECs (CLECS and cable companies) provide 44.6% of the total switched access and interconnected VoIP lines in Michigan using interconnected VoIP.

[33] Correspondingly, fewer "traditional" CLECs (i.e. those serving customers with switched access lines) serve residential consumers.

Nationwide, 55.5% of the residential wireline market is served by ILEC switched access lines; 6.4% is ILEC VoIP lines; 33.8% is served by non-ILEC providers of interconnected VoIP service; and 4.3% of the residential landline market is served by CLEC switched access lines.[34]

In Michigan, as of June 2012, 51.9% of the residential wirelines are still provided by ILECs (45.2% is traditional switched access lines and 6.7% is ILEC VoIP).[35] CLEC switched access lines make up just 3.5% of the residential wirelines in service. Non-ILEC interconnected VoIP providers serve 44.6% of the residential wirelines in Michigan.[36]

Figure 2: ILECs Continue to Dominate the Residential Wireline Market in Michigan Market Shares as of June 30, 2012



The vast majority (93%) of competitor (*i.e.*, non-ILEC) residential lines are interconnected VoIP lines in Michigan. Approximately 85% of those interconnected VoIP lines are purchased as part of a bundle (*i.e.*, "double play") with broadband service.[37] Table 1 provides the underlying data for Figure 2.

---

[34] FCC Local Competition Report, at Table 10.

[35] In Michigan, the ILECs provide no VoIP lines on a "stand-alone" basis. All lines are purchased as part of a bundle with Internet service. *Id.*

[36] Non-ILEC bundled VoIP lines (i.e. telephone lines offered as part of a bundle with Internet access service) make up 37.9% of the total residential wirelines and Non-ILEC stand-alone VoIP lines make up 3.5% of the residential wirelines in service in Michigan as of June 2012. *Id.*

[37] *Id.* The FCC's report only differentiates between non-bundled and bundled with Internet. Consumers may be purchasing "double play" (telephone and Internet) or "triple play" (telephone, Internet, and cable) service.

Table 1: Composition of the Michigan Residential Wireline Market

	Residential Lines	
	Quantity	**Percent of Total**
Incumbent Local Exchange Carrier		
Switched access lines	1,121,000	45.2%
VoIP purchased as stand-alone	0	0.0%
VoIP purchased as bundled with Internet	165,000	6.7%
ILEC Total	***1,286,000***	***51.9%***
Other than Incumbent Local Exchange Carrier		
Switched access lines	87,000	3.5%
VoIP purchased as stand-alone	167,000	6.7%
VoIP purchased as bundled with Internet	938,000	37.9%
Non-ILEC Total	***1,192,000***	***48.1%***
Total lines (ILEC and non-ILEC)	**2,478,000**	**100.0%**

Michigan Public Service Commission Data: Wireline Telecommunications Market

The Michigan PSC also tracks the status of telecommunications markets in Michigan. In its most recent report to the Governor and Legislature ("Competition Report") in June 2013, the Michigan PSC similarly presents data for the year ended December 31, 2012.[38] Section 103 of the Michigan Telecommunication Act ("MTA") as amended (MCL 484.2103) required the Michigan Public Service Commission to provide an annual report analyzing the competitive status of telecommunications services in Michigan.[39] The current report is the thirteenth annual report but also the last as a result of the MTA revision adopted by the legislature in June 2011.[40] The PSC sent surveys to 40 ILECs and 173 CLECs for the current report. All of the ILECs responded and 165 CLECs responded (though only 100 of the CLECs reported that they were actually providing service in Michigan).[41]

[38] PSC Competition Report.

[39] *Id.*, at 1.

[40] *Id.*

[41] *Id.*, at 4.

Table 2: Most Michigan CLECs Serve No or Few lines[42]

	Number of CLECs	*Percentage of CLECs*
CLECs with no lines	65	39%
CLECs with 1 – 1,000 lines	51	31%
CLECs with 1,001 – 10,000 lines	29	18%
CLECs with more than 10,000 lines	20	12%
Total Number of CLECs Responding to Survey	165	100%

The larger CLECs in Michigan predominantly serve business customers according to FCC data. CLECs provided a total of 412,000 switched access lines in Michigan as of June 30, 2012 and just 87,000 of those lines were residential switched access lines.[43] By contrast, the PSC's survey indicated that CLECs provided just over one million lines in Michigan as of December 31, 2012.[44] The cause of this discrepancy in CLEC line counts is unclear.

In any case, cable companies offering VoIP services in conjunction with Internet broadband access provide essentially all of the residential landline competition that exists in Michigan's local markets. As noted above, non-ILEC VoIP lines represent 93% of the non-ILEC lines provided to residential consumers in Michigan.[45]

[42] Reproduced from Figure 2: The 2012 Michigan Survey Results in PSC Competition Report, at 6.

[43] FCC Local Competition Report, at Table 9 and 10.

[44] PSC Competition Report, at 7.

[45] FCC Local Competition Report, at Table 10.

Wireless Statistics

According to the FCC, there were a total 9.3 million wireless telephone subscribers in Michigan as of June 30, 2012.[46] Of course, this statistic includes business and residential subscribers. Also, within residential subscribers, families often have multiple phones on one account (which shows up in the data as multiple subscribers).[47] Finally, many consumers use wireless telephones as a complement to, rather than a substitute for, wireline telephones.

> AT&T Wireless does not create any competitive pressure for AT&T – Michigan: indeed, AT&T prefers to migrate customers to its more expensive wireless service.

Nonetheless, some Michigan consumers have become "cord-cutters," meaning that they no longer subscribe to wireline service but rely solely on their wireless telephone.[48] Researchers at

---

[46] FCC Local Competition Report, at Table 18.

[47] The instructions for reporting given to mobile wireless providers are the following: "Count as a subscriber a mobile handset, car-phone, or other revenue-generating, active, voice unit that has a unique phone number and that can place and receive calls from the public switched network." FCC Form 477, Instructions for Local Telephone Competition and Broadband Reporting (FCC Form 477), Approved by OMB 3060-0816, available at http://transition.fcc.gov/Forms/Form477/477inst.pdf, at 14.

[48] The fact that some consumers choose to use only wireless telephones (*i.e.*, cut the cord) does not, in and of itself, provide evidence that mobile wireless services are economic substitutes for landline telephones. The FCC, for example, when examining a request for forbearance in Arizona by Qwest, stated: "Although the leading mobile wireless providers have ubiquitous networks, as described above, we cannot conclude on the basis of this record that residential mobile voice services fall within the same relevant product markets as wireline services. Nor is there any evidence that mobile wireless carriers are likely to alter their pricing strategies dramatically to offer a closer substitute to Qwest's local service offerings in response to a small but significant and nontransitory increase in the price of fixed mass market services, particularly given that the majority of consumers already purchase mobile wireless services at current price levels." *See In the Matter of Petition of Qwest Corporation for Forbearance Pursuant to 47 U.S.C. § 160(c) in the Phoenix, Arizona Metropolitan Statistical Area*, WC Docket 09-135, Memorandum Opinion and Order, 25 FCC Rcd 8622 (2010), at para. 83. The FCC further stated: "Moreover, while we acknowledge that the number of customers that rely solely on mobile wireless service has been growing steadily, we find that other reasons may explain the growth in the number of wireless-only customers, besides an increasing cross-elasticity of demand between mobile wireless and wireline services. For example, nationwide statistics published by the CDC suggest that *the choice to rely exclusively upon mobile wireless services could be driven more by differences in consumers' age, household structure, and underlying preferences than by relative price differentials.* Furthermore, just as some customers may rely solely on mobile wireless service regardless of the price of wireline service, *several classes of customers appear unlikely to drop wireline service in response to a significant price increase*, including those who: (a) value the reliability and safety of wireline service; (b) value a single point of contact for multiple household members; (c) live in a household with poor wireless coverage; (d) operate a business out of their home and believe that wireline service offers better reliability and sound quality; or (e) desire a service that is more economically purchased when bundled with a local service (*e.g.*, wireline broadband Internet service, or a video service). Indeed, because the record reflects that the majority of residential customers continue to subscribe to both mobile wireless and wireline services, it appears that most mass market consumers use mobile wireless service to supplement their wireline service rather than as a substitute for their wireline service." *Id.*, at para. 59 (cite omitted and emphasis added). In its final Competition Report, the Michigan PSC stated: "While the Commission does not yet consider mobile wireless to be a complete funtional equivalent to wireline service for all

the Centers for Disease Control and Prevention's National Center for Health Statistics ("CDC") estimate, based on surveys between January and December 2011, that 35.8% of adults in Michigan lived in households that relied solely on wireless telephones in 2011.[49] Also, alternatively, researchers estimated that in 2011, 7.1% of adults lived in households that were landline only in Michigan, and another 15.7% of adults lived in households that were "landline-mostly."[50] Consumers in Michigan exhibit cord-cutting rates slightly above the national average of cord cutting. During the same time period, the national average percentage of cord-cutting adults was 32.3%.[51]

> Although increasing numbers of households have become "cord-cutters" the majority are "non-cord-cutters" and remain connected with landline service.

The most recent data available shows that nationally, in the second half of 2012, 36.5% of adults lived in wireless-only households.[52] Given that the earlier Michigan data shows Michigan consumers slightly above the national average in terms of cord cutting, one can assume that Michigan cord-cutting has also increased a few percentage points. However, older adults are much less likely to "cut the cord": 43.5% of adults aged 35-44 years; 28.4% of adults aged 45-64 years; and 11.6% of adults aged 65 years and over lived in households that relied solely on wireless telephones in the last six months of 2012.[53] These data show that elderly consumers rarely view wireless service as an economic substitute for wireline service (they may own

---

customers due to issues related to coverage, ability for 9-1-1 operators to locate callers, and communications during power outages, it is the case that mobile wireless is becoming a truly competitive alternative to wireline service for an increasing number of Michigan customers." PSC Competion Report, at 12.

[49] Stephen J. Blumberg, Ph.D., and Julian V. Luke, Division of Health Interview Statistics, National Center for Health Statistics; Nadarajasundaram Ganesh, Ph.D., and Michael E. Davern, Ph.D., NORC at the University of Chicago; and Michel H. Boudreaux, M.S, State Health Access Data Assistance Center, University of Minnesota, *Wireless Substitution: State-Level Estimates From the National Health Interview Survey, 2010-2011,* National Health Statistics Reports, Number 61, October 12, 2012, at Table 1.

[50] *Id.*, at Table 2. See, also, PSC Competition Report, at 13.

[51] Stephen J. Blumberg, Ph.D., and Julian V. Luke, Division of Health Interview Statistics, National Center for Health Statistics, Centers for Disease Control and Prevention, *Wireless Substitution: Early Release of Estimates From the National Health Interview Survey, July-December 2011*, rel. June 20, 2012, at 2.

[52] Stephen J. Blumberg, Ph.D., and Julian V. Luke, Division of Health Interview Statistics, National Center for Health Statistics, Centers for Disease Control and Prevention, *Wireless Substitution: Early Release of Estimates From the National Health Interview Survey,* July - December 2012, rel. June 18, 2013, at 1.

[53] *Id.*, at 2.

wireless service, but they use wireless service *in addition to* rather than *instead of* wireline service).

There are approximately 3.8 million households in Michigan.[54] The U.S. Census Bureau estimates that there were approximately 1,442,971 persons in Michigan in 2012 that were 65 years of age or older.[55]

> The majority of Michigan households continue to rely on wireline service: wireless *supplements* rather than replaces their landline connection to the network – reliance on wireline increases with age.

The Total Residential Communications Market in Michigan

In its final *Competition Report*, the Michigan PSC stated: "While the Commission does not yet consider mobile wireless to be a complete funtional equivalent to wireline service for all customers due to issues related to coverage, ability for 9-1-1 operators to locate callers, and communications during power outages, it is the case that mobile wireless is becoming a truly competitive alternative to wireline service for an increasing number of Michigan customers."[56]

The graphic below illustrates the telecommunications market in Michigan when including wireless substitution in the telecommunications market. Using the updated 36.5% cord-cutting number from the latest CDC report and the fact that Michigan has a higher rate of cord-cutting, we assume that Michigan cord-cutting in the second half of 2012 grew to 40.5% of adults.[57] Thus, the number of wireless-only lines is estimated to be 1,686,706.[58] Under this scenario, the ILECs provide 31% of the lines, CLECs provide 29% of the lines; and wireless providers provision 41% of the residential lines in Michigan.

---

[54] U.S. Census Bureau, State & County QuickFacts, available at: http://quickfacts.census.gov/qfd/states/26000.html (reviewed October 23, 2013). The U.S. Census Bureau reports that there were 3,825,182 households in Michigan between 2007 and 2011. The data is a period estimate, in that is represents the results of a 60-month data collection period.

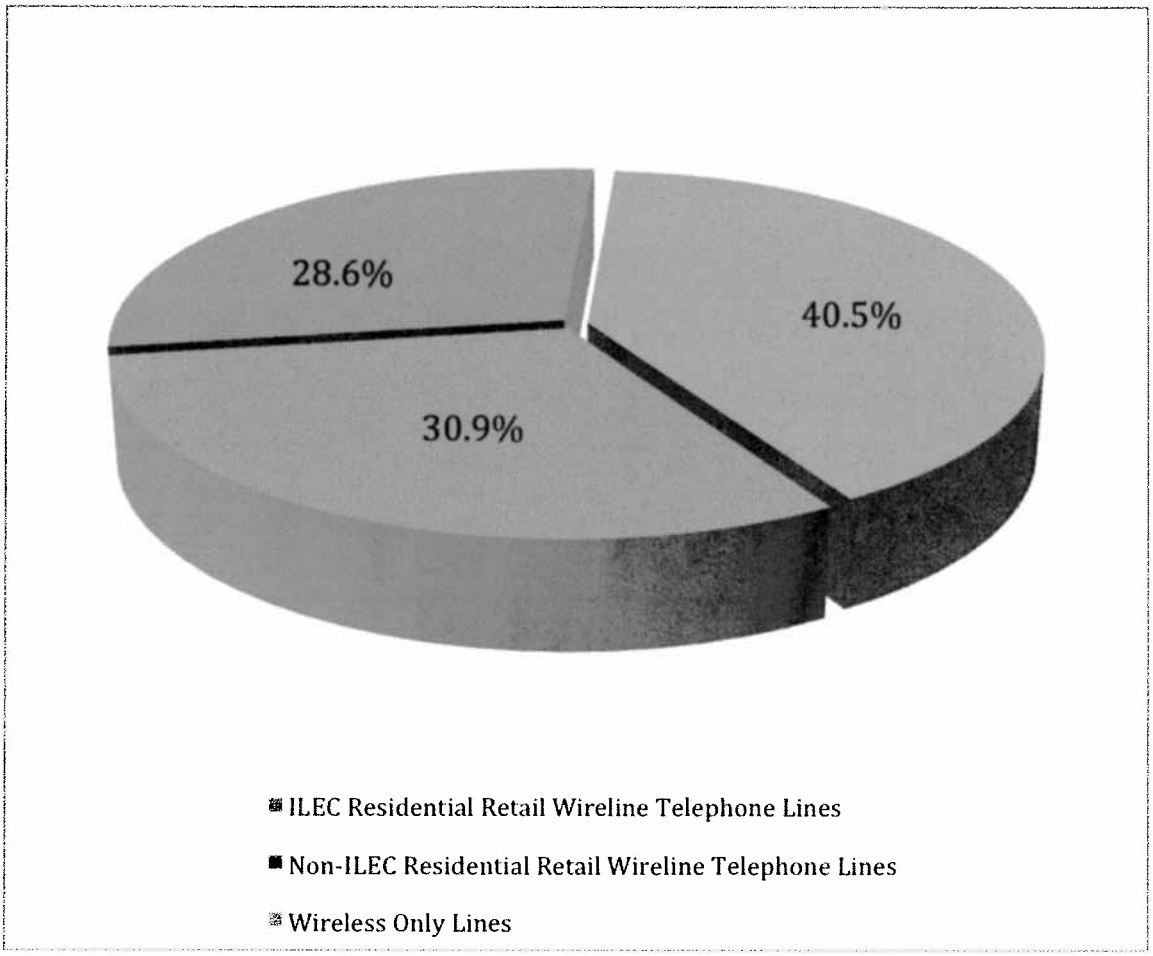
[55] *Id.* The U.S. Census Bureau reports that 14.6% of the Michigan population is 65 or older. The Michigan population in 2012 was estimated to be 9,883,360 persons.

[56] PSC *Competition Report*, at 12.

[57] The ratio of the 2011 Michigan cord-cutting estimate (35.8%) to the national estimate (32.3%) is 1.11. Using the same ratio of 2012 and the national cord-cutting estimate (36.5%) results in a Michigan cord-cutting estimate for 2012 of 40.5%.

[58] If one assumes that the FCC estimate of total residential switched access and interconnected VoIP lines shown above represents 59.5% of the market and the other 40.5% corresponds with cord-cutting wireless lines, the formula: 2,478,000 = .595X can be used. The total number of lines (including wireless cord-cutting), or "X" is 4,164,706.

Figure 3: ILECs Continue to Provide a Large Portion of the Residential Voice Lines in Michigan

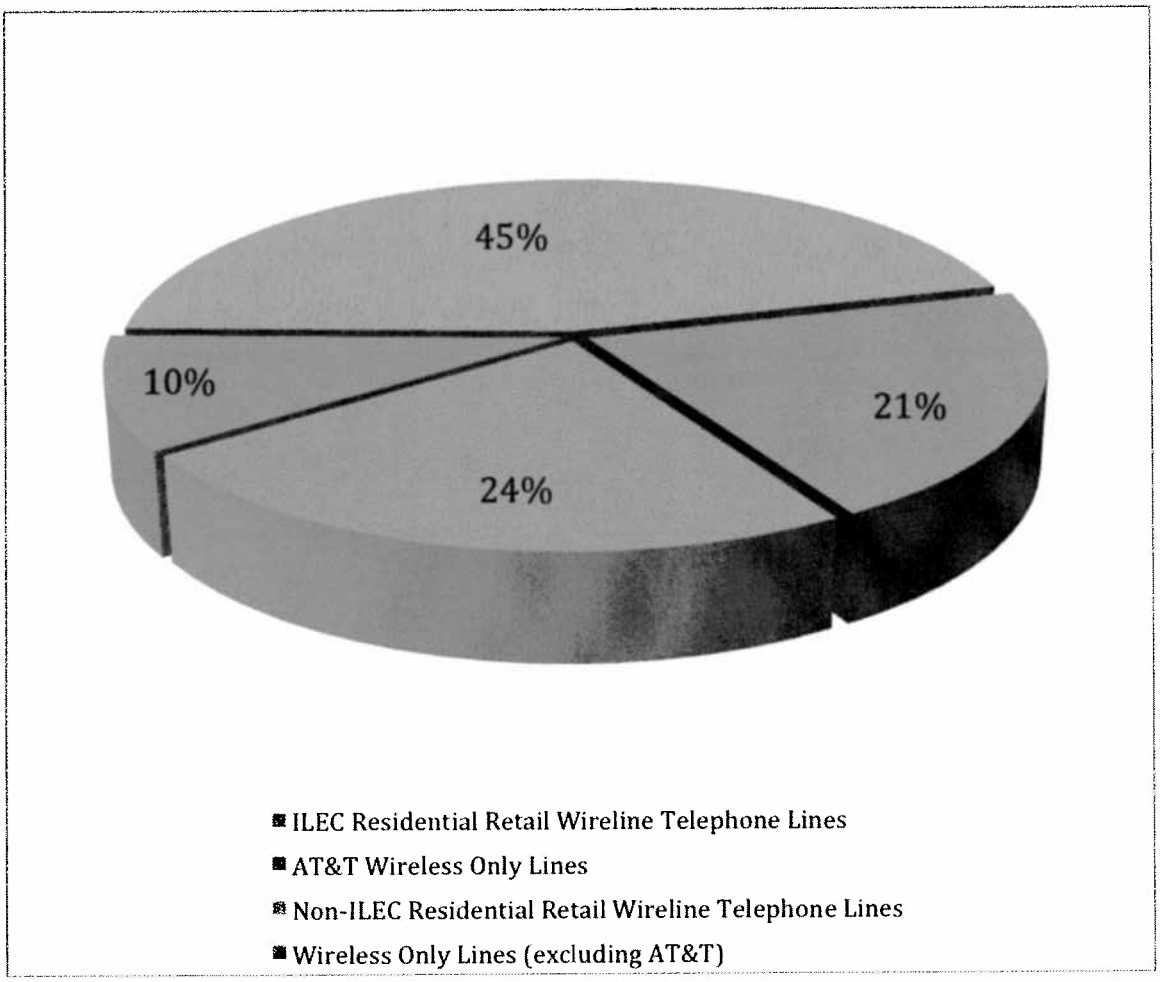


However, an analysis of the telecommunications market should not include an incumbent's own services as a competitor in the traditional sense. AT&T Wireless does not compete with AT&T's landline service. Instead, as is discussed in more detail below, AT&T is actively seeking to migrate its landline voice consumers to wireless service. Figure 4 below illustrates the market when AT&T Wireless lines are "moved" to the ILEC category. As of year-end 2011, AT&T served approximately 33% of wireless subscribers in the United States.[59] Therefore, one can estimate that AT&T served 556,613 wireless lines in Michigan.

Furthermore, Figure 4 shows *statewide* market shares – these market shares likely vary significantly depending on the community, with rural areas likely having less competition than urban ones.

[59] FCC Wireless Report, at para. 53. Together, AT&T Wireless and Verizon Wireless served over 60 percent of wireless subscribers. Id.

Figure 4: Michigan's Incumbents Serve More Than One-Third of Residential Lines Through Wireline or Wireless Service



Network Reliability

Carriers' focus is shifting from their copper networks to their wireless and VoIP services. Unlike previous changes in the technology of incumbent carriers' networks, however, the changes that are now occurring jeopardize the reliability of consumers' access to the public network and, therefore, the reliability of their access to public safety and emergency 9-1-1 services. For this reason, the goal of providing carriers with flexibility in how they modernize their networks needs to be balanced carefully with the public safety implications of this transition.

Ultimately, the technological migration should not lead to an erosion of public safety. Yet, the

shift in industry focus could jeopardize network reliability for several reasons. First, a failure to invest in maintaining the existing copper network adequately would mean that those consumers who continue to subscribe to "traditional" voice service may be unable to reach emergency services if outside plant deteriorates or if carriers fail to maintain sufficient back-up power. Second, new technologies, unlike the existing copper network, do not currently function during prolonged power outages. Third, fixed wireless services, which ILECs are seeking to substitute for basic local exchange service,[60] create new problems including their incompatibility with medical devices and security systems.[61]

Investment in existing copper network

While promoting innovation is critical, storms in the Mid-Atlantic region, which left many without power at the end of June 2012, underscore the importance of carriers' emergency preparedness to minimize risks to public safety. More than 2 million people lost access to 9-1-1 services, and for a period of four days emergency dispatchers could not see incoming numbers and addresses. Verizon, the incumbent carrier, originally denied any blame for the outage, but in a report to local government officials indicated that faulty generators, personnel errors, and uncharged batteries were to blame, among other issues.[62]

The FCC's Public Safety and Homeland Security Bureau ("Bureau") released a report entitled "Impact of the June 2012 Derecho on Communications Networks and Services" in which it concludes:

---

[60] In response to substantial public outcry and concerns, Verizon withdrew its proposal to deploy Voice Link on a permanent basis on Fire Island, New York, and instead will deploy FiOS to replace copper facilities that were damaged by Superstorm Sandy. In contrast, Verizon has not yet withdrawn a similar proposal to use Voice Link as a permanent replacement for storm-damaged facilities in some New Jersey communities. AARP has specifically requested that the New Jersey Board of Public Utilities investigate Verizon's Voice Link plans. Letter from Jim Dieterle, NJ State Director and Evelyn Liebman, Associate State Director, Advocacy, AARP to The Honorable Robert Hanna, President and The Honorable Kristi Izzo, Secretary, New Jersey Board of Public Utilities, Re: Request for an Investigation: Verizon New Jersey Inc's plan to discontinue current wireline service offerings and instead offer a wireless service as its sole service offering in the state of New Jersey, dated July 29, 2013. Fixed wireless services are discussed in greater detail later in this section of this report.

[61] For example, AT&T's web site cautions: "AT&T Wireless Home Phone is not compatible with home security systems, fax machines, medical alert and monitoring services, credit card machines, IP/PBX Phone systems, or dial-up Internet service. " http://www.att.com/shop/wireless/devices/att/wireless-home-phone-silver.html?WT.srch=1&wtPaidSearchTerm=wireless+home+phone site visited October 31, 2013.

[62] Mary Pat Flaherty, "Verizon details errors in derecho, calls response to 9-1-1 outages 'insufficient'," *The Washington Post*, August 13, 2012 (available at: http://www.washingtonpost.com/local/crime/verizon-details-errors-in-derecho-calls-response-to-9-1-1-outages-insufficient/2012/08/13/e2589596-e57f-11e1-8741-940e3f6dbf48_story.html). The FCC is investigating Verizon's performance during the storm as well in conjunction with a broader review of issues involving several carriers that handle 9-1-1 call centers. The Virginia Corporation Commission is also investigating. See Patricia Sullivan, "9-1-1 failure affected 2.3 million in Northern Virginia," *The Washington Post*, July 11, 2012, available at: http://www.washingtonpost.com/local/9-1-1-failure-cut-23-million-off-in-northern-virginia/2012/07/11/gJQAWGuedW_story.html.

> . . . [A]bove and beyond any physical destruction by the derecho, 9-1-1 communications were disrupted in large part because of avoidable planning and system failures, including the lack of functional backup power, notably in central offices. Monitoring systems also failed, depriving communications providers of visibility into critical network functions. In most cases, the 9-1-1 and other problems could and would have been avoided if providers had followed industry best practices and available guidance.[63]

Two months later, the FCC responded to the Public Safety and Homeland Security Bureau's report and issued a Notice of Proposed Rulemaking seeking comment on specific proposals to ensure that the communications infrastructure is resilient during times of disaster.[64] The FCC sought comment on implementation of the following recommendations: "(1) 9-1-1 circuit auditing; (2) 9-1-1 service provider central office backup power; (3) physical diversity of monitor and control links; and (4) improved outage notification to Public Safety Answering Points (PSAPs)."[65] In its NPRM, the FCC recognized that the inability to reach emergency services can "make the difference between life and death" and also acknowledged that even though network technology is changing, "the circuit-switched system will be in use for quite some time."[66] The FCC is tentatively scheduled to consider a report and order issuing new rules at its November 14, 2013 Open Meeting.[67]

Although the FCC's actions in this area are important, Michigan should also independently ensure that its carriers are taking appropriate steps to maintain their networks adequately, including the deployment of adequate backup power. It is important that state policy makers, working collaboratively with the FCC, also assert and carry out oversight regarding the industry's readiness for and responses to power outages and extreme weather conditions.

Vulnerability of new technologies to power outages and extreme weather conditions

Unlike "traditional" copper wireline service, which typically continues to operate during power outages, VoIP and wireless services depend on power. Backup batteries, located in consumers' homes, allow VoIP service to operate for a limited period of time during power outages, but during prolonged power outages, consumers will lose their VoIP-based landline connection to

---

[63] Federal Communications Commission, Public Safety and Homeland Security Bureau, *Impact of the June 2012 Derecho on Communications Networks and Services: Report and Recommendations*, rel. January 2013, at 1. The report is available at: http://www.fcc.gov/document/derecho-report-and-recommendations.

[64] In the Matter of Improving 9-1-1 Reliability, PS Docket No. 13-75; Reliability and Continuity of Communications Networks, Including Broadband Technologies, PS Docket No. 11-60, *Notice of Proposed Rulemaking*, rel. March 20, 2013, at para. 1.

[65] *Id.*, at para. 1.

[66] *Id.*, at para. 22.

[67] Federal Communications Commission Public Notice, October 24, 2013.

the telecommunications network.[68] Customers may not be adequately informed about this limitation.

The fact that wireless service depends on consumers' access to power in order to charge the batteries in their cell phones is likely more widely understood. The larger point is that some consumers, perhaps those in remote rural areas who live far from emergency services, those with medical conditions, the elderly, and others may value public safety to such a degree that, although they subscribe to wireless service, they *also* intentionally continue to subscribe to wireline service. Until such time as new technologies have progressed to provide comparable levels of network reliability, the option to subscribe to properly maintained, traditional copper wireline service is essential to public safety. Furthermore, even U-Verse relies on copper plant to reach households.

In October 2012, Hurricane Sandy hit the Northeast and illustrated the fragile nature of the country's communications networks. Roughly one in four cell towers were inoperable during Superstorm Sandy.[69] On November 21, 2012, the FCC announced that it would hold a series of field hearings to:

> [E]xamine new challenges to the nation's communications networks in the wake of Superstorm Sandy, and help inform recommendations and action to improve network resiliency. The field hearings will focus on the unique challenges faced by communications service providers, state and local officials, emergency personnel, and consumers before, during and after Superstorm Sandy as well as other natural disasters.[70]

Then FCC Chairman Genachowski, at the outset of the hearings, stated:

---

[68] Among other tips, the FCC advises consumers: "If your power is out or your Internet connection is down, be aware that your VoIP service may not work. Consider installing a backup power supply, maintaining a traditional phone line or having a wireless phone as a backup." http://www.fcc.gov/guides/voip-and-9-1-1-service, site visited April 18, 2013. Comcast includes this information on its website: "Q: What if my electricity goes out? Will I still be able to use my Comcast Digital Voice service? A: The eMTA (embedded Mulitmedia Terminal Adapter) Comcast supplies with your Comcast Digital Voice service contains a backup battery designed to power the eMTA for several hours of continuous service. The actual length of battery backup time will depend on the amount of time you use the phone to place outgoing calls during a power outage." http://www.comcastoffers.com/faq_phone/, site visited April 18, 2013. AT&T includes the following information on its website: "AT&T provides an initial RG [Residential Gateway] battery backup unit, with an initial backup battery, for purchasers of AT&T U-verse Voice service. When equipped with a new, fully charged backup battery, it will provide approximately four hours of battery backup power." http://www.att.com/u-verse/explore/battery-backup.jsp, site visited April 18, 2013.

[69] Jennifer Martinez, "House Dems push for hearing on Sandy's effect on communications networks," *Hillicon Valley (The Hill's Technology Blog)*, November 19, 2012, available at: http://thehill.com/blogs/hillicon-valley/technology/268741-house-dems-call-for-hearing-on-affect-hurricane-sandy-had-on-communications-networks.

[70] FCC News Release, November 21, 2012. On February 5, 2013, the FCC held field hearings in New York City and Hoboken, New Jersey to examine network resiliency issues in the aftermath of superstorm Sandy. A second hearing was held on February 28, 2013 in California.

Superstorm Sandy was one of the most devastating natural disasters ever to hit this region. It underscored something important: how essential modern communications like mobile and broadband have become to our daily lives.

...

The fact is we rely on our electric grid to power individual devices, to power antenna towers and other elements of fixed and mobile communications networks, and to power the central offices, switches and other sophisticated equipment that connect it all together. We may not know yet exactly what caused the Super Bowl power outage on Sunday, but people from New York and New Jersey already knew the consequences of losing power, and the consequences of aging infrastructure.

...

Our nation's communications infrastructure is a vital part of our public safety and national security. The inability to communicate with family and emergency personnel during a disaster is simply unacceptable. We must meet this moment with smart action from all sectors to ensure that communications networks are working when people need them most.

Much has been done. Much more needs to be done.[71]

[71] Statement of FCC Chairman Julius Genachowski, Superstorm Sandy Field Hearings, New York, NY and Hoboken, NJ, February 5, 2013.

Following up on those hearings, on September 26, 2013, the FCC released a Notice of Proposed Rulemaking ("NPRM") proposing to adopt a requirement that wireless providers publicly disclose the percentage of cell sites that are operational on their network during and after disasters.[72] The service disruptions were not evenly distributed among wireless carriers in the aftermath of Superstorm Sandy, leading to the FCC's conclusion that "operational choices and practices of different mobile wireless service providers may account for much of this variation."[73] The FCC would require providers to report the information to the Commission for public disclosure in order to "encourage competition to improve the resiliency of mobile wireless communications networks during emergencies."[74] The wireless providers already report the information as part of a larger reporting system to the FCC, but currently do so on a confidential basis.

Emergency preparedness and consumer notification about the public safety implications of new technologies

The importance of public safety to Michigan underscores the importance of having state regulators, in collaboration with relevant state and municipal officials, oversee carriers' preparedness for power and network outages, plans for communicating with their consumers and relevant public officials about the limitations of new technology during power outages, and actual performance relative to outages that affect significant numbers of consumers during the outages.

The FCC requires service providers to report service outages. Most recently it expanded those requirements to VoIP service providers.[75] Currently, the FCC only shares the outage information with other federal agencies.[76] The Michigan legislature should consider requiring service

---

[72] In the Matter of Improving the Resiliency of Mobile Wireless Communications Networks; Reliability and Continuity of Communications Networks, Including Broadband Technologies, PS Docket Nos. 13-239; 11-60, *Notice of Proposed Rulemaking*, rel. September 27, 2013, at para. 1.

[73] *Id.*, at para. 3.

[74] *Id.*, at para. 1.

[75] The requirements took effect December 17, 2012. Federal Communications Commission, Public Notice, "FCC Announces Effective Date of Rules Extending Outage Reporting Requirements to Interconnected Voice Over Internet Protocol Service," PS Docket No. 11-82, December 6, 2012. Service providers use the web-based Network Outage Reporting System (NORS) to report service outages. As described by the FCC: ". . . communications providers, including wireline, wireless, paging, cable, satellite and Signaling System 7 service providers, to electronically report information about significant disruptions or outages to their communications systems that meet specified thresholds set forth in Part 4 of the FCC's rules (47 C.F.R. Part 4). Communications providers must also report information regarding communications disruptions affecting Enhanced 9-1-1 facilities and airports that meet the thresholds set forth in Part 4 of the FCC's rules. Given the sensitive nature of this data to both national security and commercial competitiveness, the outage data is presumed to be confidential." See http://transition.fcc.gov/pshs/services/cip/nors/nors.html.

[76] In the Matter of The Proposed Extension of Part 4 of the Commission's Rules Regarding Outage Reporting To Interconnected Voice Over Internet Protocol Service Providers and Broadband Internet Service Providers, PS Docket

providers to submit copies of those reports to the Michigan PSC subject to any appropriate proprietary agreements. As noted above, the FCC is also considering requiring wireless providers to disclose publicly information regarding cell site outages. The Michigan legislature should consider requiring wireless providers to submit copies of the reports that they submit to the FCC to the Michigan PSC as well.

Network reliability and public safety

Migration to new technologies should not lead to an erosion of public safety.

Consumers should be informed adequately about any limitations of new technology that affect public safety.

State regulators should oversee carriers' preparedness for and responsiveness to power and network outages.

Fixed wireless service – policy issues raised by Voice Link

Verizon's introduction in 2013 of a new service, called Voice Link, which is a fixed wireless service, has brought significant public policy concerns to the forefront before state and federal regulators that may surface in Michigan as well. On May 3, 2013, Verizon submitted a tariff to the New York Public Service Commission ("NY PSC") in which Verizon sought to offer its new wireless Voice Link service *instead of* its traditional landline service not only on Fire Island but also more broadly throughout the state of New York[77] Among other things, Verizon's proposed tariff encompassed vague criteria, which apparently Verizon would have been able to apply unilaterally as purported justification for abandoning its copper plant. Because the tariff had broad and substantial implications for consumers, AARP and other organizations urged the NY

No. 11-82, *Report and Order*, rel. February 21, 2012, at paras. 109-112. On September 26, 2013 the FCC released a Notice of Proposed Rulemaking ("NPRM") proposing to adopt a requirement that wireless providers publically disclose the percentage of cell sites that are operational on their network during and after disasters. The FCC would require providers to report the information to the Commission for public disclosure in order to "encourage competition to improve the resiliency of mobile wireless communications networks during emergencies." In the Matter of Improving the Resiliency of Mobile Wireless Communications Networks; Reliability and Continuity of Communications Networks, Including Broadband Technologies, PS Docket Nos. 13-239; 11-60, *Notice of Proposed Rulemaking*, rel. September 27, 2013, at para. 1. The wireless providers already report the information as part of a larger reporting system to the FCC, but currently do so on a confidential basis.

[77] Case 13-C-0197 – Tariff filing by Verizon New York Inc. to introduce language under which Verizon could discontinue its current wireline service offerings in a specified area and instead offer a wireless service as its sole service offering in the area, Notice Inviting Comments, issued May 21, 2013 ("Notice"), at 1.

PSC to investigate Voice Link, to develop a complete evidentiary record, and to afford stakeholders an opportunity to explore Voice Link more fully.

In large part due to the significant concerns raised by consumers, municipalities, first responders, and legislators, on September 10, 2013, Verizon announced that it would drop its plans to solely provide Voice Link service on Fire Island.[78] Instead, Verizon announced plans to deploy a fiber optic network on Fire Island and will provide both voice and broadband services to residents. However, Verizon still has not dropped its plans to substitute Voice Link service in New Jersey communities that were similarly harmed by Superstorm Sandy and that were part of the same "Section 214" application before the FCC.

In a letter to the FCC filed on September 27, 2013, Verizon amended its application to delete the Fire Island geographic area and Verizon New York from the case. The geographic areas that continue to be affected include portions of New Jersey's Barrier Islands: Mantoloking, Brick, and Bay Head.[79] Verizon contends that because consumers in these communities have the option of subscribing to the cable company's voice service, which was not the case in Fire Island where there is no cable telephony voice service, this differential treatment is justified. This rationale is not persuasive for various reasons, including the fact that without Verizon's DSL, consumers would have only a single provider of broadband Internet access, and if Verizon offers only Voice Link (instead of either copper-based or fiber-based local telephone service), consumers will no longer have an affordable, reliable option for stand-alone basic local service.

As is discussed above AT&T also offers a fixed wireless service, which it sells under the name "Wireless Home Phone."[80] A key policy issue raised by fixed wireless service is how disparate the options will be for consumers residing in different communities and the role of the PSC in overseeing the reliability and affordability of basic local service.

Landline is superior to the fixed wireless services that carriers presently offer because:

- Landline supports digital subscriber line (DSL) service and fixed wireless services do not.
    - In some communities this may be the only option for broadband Internet access – households and small businesses without Internet access get left behind and

[78] Verizon News Release, "A Giber-Optic Network for Fire Island," September 10, 2013, available at: http://newscenter.verizon.com/residential/news-articles/2013/09-10-a-fiber-optic-network-for-fire-island/.

[79] Letter from William H. Johnson, Vice President and Associate General Counsel to Ms. Marlene H. Dortch, Secretary, Federal Communications Commission, Re: Amendment to Modify Affected Geographic Areas of Service and Withdraw Verizon New York Inc. as an Applicant, Section 63.71 Application of New York Inc. and Verizon New Jersey Inc., WC Docket No. 13-150, Comp. Pol. File No. 1115, September 27, 2013 ("Verizon September 27 FCC filing").

[80] AT&T's web site cautions: "AT&T Wireless Home Phone is not compatible with home security systems, fax machines, medical alert and monitoring services, credit card machines, IP/PBX Phone systems, or dial-up Internet service. " http://www.att.com/shop/wireless/devices/att/wireless-home-phone-silver.html?WT.srch=1&wtPaidSearchTerm=wireless+home+phone site visited October 31, 2013.

economic development is harmed. Even where cable broadband access is offered, consumers may prefer DSL. (Even if Verizon or AT&T were to offer 4G LTE option, this wireless broadband alternative is much more expensive).

- Landline supports Life Alert systems and fixed wireless services do not.
    - Carriers may come up with an alternative but that is not yet here. Also any alternative likely will shift new costs to the consumer.

- Landline supports alarm systems and fixed wireless services do not.
    - Same issue as with Life Alert regarding possible future solutions.

- Landline supports credit card transactions and faxes and fixed wireless services do not.
    - Small businesses are harmed by fixed wireless services – ILECs are likely to deploy fixed wireless service in precisely those communities that are trying to encourage economic development – rural areas.

- Landline provides better quality.

- Fixed wireless service relies on the wireless network – history has shown us that during severe weather the wireless network gets overloaded – the copper network functions just fine. With ILECs' wired service, even when power is lost, the phone continues to work.

- 36 hours of battery backup is insufficient during prolonged power outages

- Wireless coverage is inconsistent from location to location, and calls are more likely to be blocked or dropped due to poor signal strength or at times of high usage.

- During emergency conditions (as at all other times), fixed wireless will not permit the use of consumers' medical and security systems.

- With Voice Link, the customer location information programmed into the unit becomes unreliable if the customer relocates and brings along the Voice Link unit. Emergency and public safety officials cannot help a person in a life-threatening situation if they show up at the wrong location. The customer's relocation is likely to be unnoticed by Verizon, since no formal "change of address" is required due to the prevalence of paperless billing.

- By contrast, with wireline telephone, a customer's 9-1-1 location is permanently and inalterably linked to the location to which the service is provided. Even "conventional" mobile wireless service is more reliable than fixed wireless service in providing customer location (since a consumer's wireless phone is programmed to transmit the user's

location of the nearest cell tower). With fixed wireless equipment, there is no automatic updating of location information when the unit is moved.

- The Fire Chief of Fair Harbor on Fire Island told the New York Public Service Commission, "There is no doubt that the replacement of permanent land lines with a wireless service will compromise [communication of emergencies] and thus the safety and lives of our residents."

No evidence to show that consumer protection measures factor into companies' business case analyses of potential investment

Contrary to industry rhetoric, there is no evidence that regulatory oversight inhibits network investment. Rational businesses, in fulfilling their fiduciary responsibility to shareholders, invest in those geographic and product markets where a business case analysis shows that the net present value of the anticipated stream of new revenues (or savings in operating expenses) associated with a particular investment is greater than the net present value of the costs of such investment. Of course, carriers make other investments as well to fulfill public policy objectives, such as investments relating to operating a reliable network that can meet public safety and emergency 9-1-1 requirements. Although these investments likely do not "pass" a business case analysis, they are nonetheless critically important.

If, for example, AT&T does not consider it profitable to deploy its fiber-based U-Verse service in a sparsely populated region in Michigan, it is implausible that the elimination of the existing protection for AT&T's basic local exchange service will suddenly render U-Verse deployment profitable in rural areas. Instead, state policy makers should be concerned that *absent regulatory oversight* AT&T will neglect its infrastructure in those geographic and product markets that AT&T considers unprofitable, whether they be rural areas or consumers who purchase "no-frills" basic local exchange service. Furthermore, regulatory oversight of basic local exchange service does not prevent AT&T from deploying U-Verse in those parts of the state where it anticipates generating a positive cash flow.

Nonetheless, AT&T and other carriers may seek to engage in scare tactics, seeking to persuade state policy makers that every dollar they spend to maintain the state's copper network is a dollar that they do not have to invest in "new" and "modern" technologies. This ploy should be analyzed carefully. "New" technology typically is a reference to wireless services and to VoIP or IP-based technology. Nationally, AT&T, for example, earns seemingly ample profit from its wireless operations with an EBITDA margin of approximately 42% in the third quarter of 2013,[81] and AT&T earns 32.3% of the nation's wireless revenues.[82] Regulatory oversight

[81] AT&T Investor Briefing No. 282, Third Quarter 2013, October 23, 2013, at 2. EBITDA (Earnings before Interest, Taxes, Debt, and Amortization) equals accounting profits before deducting interest expenses, corporate income taxes, depreciation, and amortization and an EBITDA margin is EBITDA as a percentage of total revenue.

[82] FCC Wireless Report, Table 12, at page 55.

certainly does not seem to be hampering AT&T's ability to deploy and to market wireless service profitably.[83] Instead, state regulators' concern should be that absent regulatory oversight, AT&T will allow its copper network to deteriorate prematurely so that AT&T can more easily persuade its customers to migrate to its more lucrative product lines. As to the much-heralded transition to IP, the primary providers of VoIP are the cable companies, which provide VoIP service to approximately 1.2 million residential and business lines in Michigan, and secondarily, the ILECs that offer VoIP service to approximately 193,000 residential and business lines in Michigan.[84]

There is no evidence that consumer protection measures for basic local service affects carriers' business case decisions for wireless and fiber deployment.

The notion that the regulation of AT&T's basic local exchange service somehow prevents companies from offering VoIP is, on its face, illogical. Regarding AT&T's VoIP deployment – AT&T's decisions about when and where to deploy its U-Verse service likely are based on rigorous business case analyses that are specific to AT&T's estimates of the cost and benefit of particular deployment strategies. In other words, there is no evidence that if AT&T "saves" a dollar by neglecting its copper network that it will then "spend" that same dollar on U-Verse deployment. AT&T is seeking the Legislature's blessing on a vision where AT&T could unilaterally determine when and where to turn its back on some of the state's most vulnerable customers – such as the elderly, those who value the reliability of the copper network to reach emergency services, and those with low and fixed incomes.

A vision of ubiquitous, affordable broadband service is entirely appropriate, but maintaining basic consumer protection does not hinder the pursuit of this vision. Regarding innovation in new technologies, such as broadband Internet access service, carriers will invest where it is profitable to do so – and will not invest where it is not profitable to do so. For example, the reason that there are gaps in broadband deployment throughout the country is that there are locations where the cost of deploying broadband "last miles" exceeds the anticipated revenues associated with such deployment.[85] Requiring incumbent carriers to continue to offer basic

[83] Indeed, in AT&T's latest financial reports, AT&T indicates that its strong business in "consumer IP data services in the third quarter more than offset lower revenues from voice and legacy products." AT&T Investor Briefing No. 282, Third Quarter 2013, October 23, 2013, at 8-9.

[84] FCC Local Competition Report, at Table 9.

[85] Federal Communications Commission, *Connecting America: The National Broadband Plan*, report submitted to the U.S. Congress, March 17, 2010 ("Plan" or "NBP"), at 136. The American Recovery and

exchange service does not in any way alter the cost-benefit analysis associated with broadband deployment – regardless of the level of regulatory oversight, carriers will consider the net present value of the cost (the initial investment and the annual expenses) and the net present value of the revenues (and reduction in operating expenses) associated with the investment. A remote area that is costly to serve under today's regulatory regime will not be any less costly to serve in a deregulated environment. AT&T and other incumbents will continue to deploy and offer new services when and where such investment is anticipated to be profitable and to ignore communities where business case analyses fail to justify the investment.

Also, there may be evidence that increased broadband deployment increases jobs, but that observation does not in any way prove an implied and flawed theory that maintaining basic telephone service hinders broadband deployment. Moreover, there is no evidence to support the notion that AT&T lacks the financial resources necessary to maintain its copper network *and* to deploy broadband service.

It would be imprudent for state policy makers to allow incumbent carriers to neglect their copper network. Moreover, the transition to new technology should be subject to regulatory oversight so that essential consumer protection measures (such as reliable access to emergency 9-1-1 services) are retained during the transition to new technologies.

Simultaneous regulatory oversight of traditional services with carriers' migration to new technologies

AT&T has parlayed its historic incumbency advantage into various profitable new lines of business and seems intent on pursuing these new lines of business at the expense of its basic service customers. Although AT&T may *prefer* to ignore its copper-based basic local exchange service, there is no evidence that the present level of regulatory oversight of basic voice service in Michigan is preventing AT&T from making those investments it considers to be in its best financial interest. In its November 2012 presentation to investors, AT&T announced its "Project Velocity IP," which aims to invest $8 billion in its wireless network and $6 billion in wireline by year end 2015. The wireline investment is aimed at deploying IP broadband to 75 percent of customer locations, business fiber, and efficiency improvements to the legacy system.[86] John Stephens, AT&T's SVP and CFO, stated:

> We continue to hit new and higher benchmarks with U-verse, including 8 million total U-verse subscribers, 4.5 million U-verse Video customers, with 192,000 net adds in the quarter, and 7.7 million high-speed IP broadband subscribers. That's

---

Reinvestment Act of 2009 ("ARRA") was signed into law on February 17, 2009. American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5, 123 Stat. 115 (2009) ("ARRA").

[86] Transcript of AT&T Inc. Q4 20122 Earnings Call, January 24, 2013 (accessed 4/18/2013 from www.morningstar.com/earnings/earnings-call-transcript.aspx?t=T).

> nearly a 50% increase for the year, with more than 600,000 added in the fourth quarter. And for the first time, our consumer high-speed IP broadband subscribers outnumber our legacy broadband customers. And while overall broadband subscribers remain steady in the quarter, total broadband ARPU was up more than 10% year-over-year.[87]

If granted yet further regulatory relief, it is unclear what additional investment AT&T would actually make in Michigan. AT&T describes its business as having "Cash Flows at Record Levels."[88] AT&T describes "[r]ecord cash from operations of $39.2 billion and record free cash flow for full-year 2012."[89] Also, in 2012, AT&T returned $23 billion to shareowners through dividends and share repurchases.[90] Furthermore, AT&T's wireline segment operating income margin was reported as 12.0%.[91]

In January 2013, Randall L. Stephenson (Chairman and CEO) described AT&T's Project Velocity IP plan as follows:

> Mostly, you are familiar with the plan. It includes LTE covering 300 million people by year-end 2014, with an extensive network densification aspect to it, IP broadband to 75% of our wireline customer locations, fiber into 1 million additional business locations, and we plan to execute a full transition of our network to wireless plus IP. Then once Project VIP is complete, nearly all of our customers will have access to high-speed broadband through wireless, wired, or some combination of both. So this is going to give us a much larger platform for new services. It will improve our revenue mix and it's going to improve our cost structure for many years to come.[92]

AT&T has made clear its intention to abandon its wireline service. As described in one news article:

> The three-year plan will extend high-speed Internet to 8.5 million more homes and businesses but could eventually leave a quarter of the customers in AT&T's landline footprint, or 19 million homes and businesses, without any landline service from AT&T.

---

[87] *Id.*

[88] Laying a Foundation for Future Growth, at 91.

[89] AT&T Investor Briefing, 4th Quarter 2012, January 24, 2013, at p. 1.

[90] *Id.*

[91] *Id.*, at p. 13.

[92] Transcript of AT&T Inc. Q4 20122 Earnings Call, January 24, 2013 (accessed 4/18/2013 from www.morningstar.com/earnings/earnings-call-transcript.aspx?t=T).

> Most of those customers will have access to wireless high-speed Internet and phone service, which AT&T said would reach 99% of its landline footprint by the end of 2014.[93]

The pace and way in which Michigan migrates to new technologies for telecommunications should be subject to state regulatory oversight rather than being dictated solely by AT&T. Consumers' reliance on a reliable, affordable, ubiquitous network, which AT&T built over many years using ratepayer funds, raises public policy concerns that trump AT&T's specific interest in maximizing its profits on behalf of its shareholders.

Section 3 Legislative Proposal

Introduction

The Michigan Telecommunications Act, which includes critically important elements for consumers, was substantially revised in June 2011. Beginning in January 2017, the current version of Section 313 permits basic local exchange and long distance service providers to discontinue service to customers in any exchange after providing notice, as long as there are two other "comparable" service providers. However, the proposed SB636 deletes that language. Specifically, the following provision would be deleted:

> A telecommunication provider that provides either basic local exchange or toll service, or both, shall not discontinue either service to an exchange unless 1 or more alternative providers for toll service, or 2 or more alternative providers for basic local exchange service, are furnishing a comparable voice service to the customers in the exchange. A comparable voice service includes any 2-way voice service offered through any form of technology that is capable of placing and receiving calls from a provider of basic local exchange service, including voice over internet protocol services and wireless services.[94]

In addition, the proposed legislation also would reduce the amount of notice consumers would receive and would reduce public input or Commission review.[95]

Michigan has yet to fully see the consequences of the 2011 amendments to the Michigan Telecommunications Act. If there is any need to revamp the current Section 313, the Legislature should seek instead to modify the existing legislation to ensure that consumers have actual competitive choices for reliable and affordable telephone service before allowing incumbent

[93] "AT&T Move Signals End of the Copper-Wire Era," Anton Troianovski *Wall Street Journal,* November 7, 2012.

[94] 1991 PA 179, Sec. 313 (1).

[95] 1991 PA 179, Sec. 313 (3) would be deleted under the proposed legislation.

local exchange carriers to abandon communities and consumers. Rather than bringing the law in line with this objective, the proposed bill takes a dangerous step in the other direction.

The state's most vulnerable citizens are at risk of losing reliable telephone service. The elderly, those with particular medical needs, rural communities, and those on fixed incomes are among the citizens who would lose critically important services.

Vision for the Future

A vision for the future should promote the public good and necessarily entails appropriate levels of regulatory oversight to address the market imperfections and distortions that persist in today's telecommunications markets. The Legislature should resist industry's clamor to allow it to shed regulatory oversight. It is critically important that state policy makers not equate technological change with the achievement of effective competition. Just as replacing bank tellers with ATMs does not alter the need for regulatory oversight of banks, a transition to an IP-based technology does not negate the need for protection in those markets that do not yet have effective competition. Indeed, changes in markets can lead to *fewer* choices for consumers – if AT&T and other ILECs abandon the copper network, for example, consumers will lose their option for digital subscriber line service, and competitors' may lose their interconnection rights.

Technological progress and consumer protection are mutually compatible.

The evolution of Michigan's telecommunications infrastructure, industry's deployment of new technology, and adequate consumer protection are compatible goals. As Michigan transitions to new forms of telecommunications, there is no need, and it would be imprudent policy, to allow

the erosion of consumer protection measures. A reliable ubiquitous network is essential for the welfare, economy, and safety of Michigan's citizens. As networks continue to evolve, it is important that the evolution of the state's telecommunications infrastructure protects network reliability and ensures that all consumers benefit from new technologies.[96]

Telecommunications markets and technology likely will continue to undergo significant changes in the upcoming years. Up-to-date information is critically important so that state policy makers can ensure that the legislative and regulatory frameworks continue to evolve, as needed, to ensure that consumers in Michigan benefit from reliable, affordable, and innovative telecommunications services, that competition continues to emerge in those markets where it is efficient, and that consumer protection continues where market imperfections and distortions persist.

[96] The authors fully support comprehensive measures to ensure the deployment, quality, and affordability of broadband services. Specific policy recommendations to achieve these goals are beyond the scope of this report. However, as this report demonstrates, maintaining basic consumer protection does not hinder the pursuit of ubiquitous, affordable broadband service. Regarding innovation in new technologies, such as broadband Internet access service, carriers will invest where it is profitable to do so – and will not invest where it is not profitable to do so.